

II. Amendments to the Claims

Applicants amend claims 21–22, 26–28 and 39–40, as set forth below in a complete listing of all of the claims of the application. The status of each claim is noted parenthetically in accordance with 37 C.F.R. Section 1.121. This listing of claims will replace all prior revisions and listings of claims in the application.

Listing of Claims

Claims 1–20. (Canceled)

Claim 21. (Currently Amended) A method for grafting an unsaturated monomer onto a guar comprising the steps of: (1) forming a mixture comprised of an unsaturated monomer having a functional group selected from ~~carboxylate, phosphonate, sulfonate and~~ quaternary ammonium and a water-soluble or water-dispersible guar; (2) drying the mixture and (3) irradiating the mixture with an amount of electron beam radiation sufficient to form an unsaturated monomer-water-soluble or water-dispersible guar graft copolymer, wherein the graft copolymer is depolymerized to a molecular weight lower than the molecular weight of the ungrafted guar, and the guar in the copolymer has a molecular weight of between 100,000 and 700,000 Daltons.

Claim 22. (Currently Amended) The method of claim 21, wherein the unsaturated monomer is a vinyl monomer having a quaternary ammonium group selected from methamidopropyltrimethylammonium chloride.

Claim 23. (Previously Presented) The method of claim 21, wherein the guar is selected from the group consisting of guar gum and guar powder.

Claim 24. (Previously Presented) The method of claim 21, wherein the guar is guar powder.

Claim 25. (Previously Presented) The method of claim 21, wherein the guar is guar gum.

Claim 26. (Currently Amended) The method of claim 24 23, wherein the ~~functional group~~ vinyl monomer is ~~a carboxylate, a phosphonate, or a sulfonate group~~ methyamidopropyltrimethylammonium chloride.

Claim 27. (Currently Amended) The method of claim 24 24, wherein the vinyl monomer is methacrylamidopropyltrimethylammonium chloride.

Claim 28. (Currently Amended) The method of claim 24 25, wherein the ~~functional group~~ vinyl monomer is ~~a quaternary ammonium group~~ methyamidopropyltrimethylammonium chloride.

Claims 29–38. (Canceled)

Claim 39. (Currently Amended) A method for grafting an unsaturated monomer onto a guar comprising the steps of: (1) forming a mixture comprised of an unsaturated monomer having a functional group selected from ~~carbonate, sulfate, phosphate and~~ quaternary ammonium and a water-soluble or water-dispersible guar; (2) drying the mixture in the air and (3) irradiating the mixture with an amount of electron beam radiation sufficient to form an unsaturated monomer-~~water-soluble or water-dispersible~~ guar graft copolymer, wherein the graft copolymer is depolymerized to a molecular weight lower than the molecular weight of the ungrafted guar, and the guar in the copolymer has a molecular weight of between 100,000 and 700,000 Daltons.

Claim 40. (Currently Amended) A method for grafting an unsaturated monomer onto a guar comprising the steps of: (1) forming a mixture comprised of an unsaturated monomer having a functional group selected from ~~carboxylate, phosphonate, sulfonate and~~ quaternary ammonium and a water-soluble or water-dispersible guar; (2) drying the mixture in a vacuum and (3) irradiating the mixture with an amount of electron beam radiation sufficient to form an unsaturated monomer-~~water-soluble or water-dispersible~~ guar graft copolymer, wherein the graft copolymer is depolymerized to a molecular weight lower than the molecular weight of the ungrafted guar, and the guar in the copolymer has a molecular weight of between 100,000 and 700,000 Daltons.